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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/004,685	HAAVISTO, JANNE	
	Examiner	Art Unit	
	Hung H. Lam	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11-17 and 19-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9, 11-17 and 19-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendments, filed on 08/06/07, have been entered and made of record. Claims 10 and 18 are canceled. Clams 1-9, 11-17 and 19-22 are pending.

Response to Arguments

2. Applicant's arguments filed on 08/06/07 have been fully considered but they are not persuasive.

3. With regarding independent claims 1 and 11, the Applicants representatives argue that the following feature is absent from Milch teaching :" using said statistical data for adjusting said image sensor of the camera module for generating image data for a next image." The Examiner respectfully disagrees. Milch teaches a metadata contained information about the capture scene or photographer's technical preferences or even information how the image should be reproduced". Further more, the claims languages do specifically require whether the next image is the same identical or difference image. Therefore, the combination of Davis, Gindele and Milch do in fact read on the independent claims 1 and 11.

4. The Applicants representatives argue that Milch does not disclose information on how the image should be produced is transmitted. The Examiner respectfully disagrees. The Examiner has never relied on Milch reference to teach how the image should be transmitted. The Examiner

only relied upon Davis and Gindele for collecting statistical data or meta-data and transmitting meta-data over other computer system (Davis: Figs. 1-4; abstract Col. 4, Ln. 12-34; statistical data is interpreted as brightness data and other operating parameters from a camera; Gindele: Col. 5, Ln. 25-36); Gindele further teaches that brightness value is an example or pieces of image meta-data (Col. 5, Ln. 25-36). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

5. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the modifications thus provide a means for reproducing an identical image.

6. The Applicants representatives stated that the "Applicant is considering filing a Declaration under 37 C.F.R. 131 with an evidentiary exhibit to establish such earlier date of invention, if necessary to overcome the foregoing rejection under 35 U.S.C. 103". However, this statement is ineffective to overcome the Milch reference. The evidence submitted fails to show the following, the deficiency is not limited to these examples:

Applicant fails to provide evidence of that the invention was conceived prior to the US. filling date of Milch. In establishing conception, a party must show possession of every feature recited in the count, and that every limitation of the count must have been known to the inventor at the time of the alleged conception (see MPEP 2138.04).

No evidences are submitted to establish diligence from a date prior to the date of reduction to practice of the Milch reference to either a constructive reduction to practice or an actual reduction to practice.

7. In view of the above, the Examiner believes that the broadest interpretation of the present claimed invention does in fact read on the cited reference for at least the reasons discussed above and as stated in the detail Office Action as follows. This Office action is now made final.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1-5, 7-9, 11-13, 15-17, 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis (7,010,144) in view of Gindele (US-6,636,646) and further in view of Milch (US-6,429,924).

With regarding to **claim 1**, Davis discloses a method for the transmission of data between a camera module and an electronic device (Fig. 1; see the connections between camera 10 and

other electronics device; Col. 4, Ln. 12-34), said method comprising the steps of generating image data in the image sensor of the camera module (Figs. 1; camera 10), said image sensor comprising at least one row of pixels, and said image data comprising the data generated by said row of pixels (the image sensor 16 inherently includes at least one row of pixels and generates image data from the row of pixel).

However, Davis fails to explicitly discloses the steps of collecting statistical data from the image data, wherein said statistical data is suitable for processing an image to be generated; and wherein the method further comprises: transmitting said image data and said statistical data from the camera module to the electronic device essentially at the same time.

In the same field of endeavor, Gindele teaches a camera system wherein a source digital image is received and processed by a digital image processor (Figs. 2-3; 20) in order to calculate a brightness balance value (Col. 5, Ln. 3-6). Gindele further teaches that the source digital image and the brightness balance value are transmitted over a computer network (Figs. 2-3; 45) wherein the digital image processor (Fig. 3; 20) of a second computer system receives the source digital image and uses the brightness balance value to adjust the overall brightness of the digital image in a manner such that a pleasing looking image is produced (Figs. 2-3; Col. 5, Ln. 6-36). In light of the teaching from Gindele, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Davis to transmit a source image and brightness balance value of the source image over a communication system. The modifications thus permit a second computer system to enhance the look of the received source image using the received brightness balance value (Gindele: Col. 5, Ln. 6-36).

Davis in view of Gindele teaches an imaging device for providing images and meta-data (Davis: Figs. 1 and 3; abstract Col. 4, Ln. 12-34; statistical data is interpreted as other operating parameters from a camera and brightness data which is a pieces or sample of meta-data; see Gindele: Col. 5, Ln. 25-36), but Davis in view of Gindele fails to explicitly disclose using said statistical data for adjusting said image sensor of the camera module for generating image data for a next image.

In the same field of endeavor, Milch teaches an imaging device wherein a recorded data generally known in the imaging industry as metadata, may contain information about the capture scene, or about the photographer's technical preferences, or even contain information on how the image should be reproduced (Col. 1, Ln. 35-47). In light of the teaching from Milch, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the metadata of Davis and Gindele to contain information on how the image should be reproduced. The modifications thus provide a means for reproducing an identical image.

With regarding to **claim 2**, Davis in view of Gindele and further in view of Milch discloses a method wherein said image data and said statistical data are transmitted interlaced with each other on at least one common bus (Davis: Col. 4, Ln. 12-34; Gindele: Col. 4, Ln. 49-Col. 5, Ln. 36).

With regarding to **claim 3**, Davis in view of Gindele and further in view of Milch discloses a method wherein said image data and said statistical data are transmitted in the same data frame (Davis: Fig. 3), said data frame comprising at least one image data unit at least one

statistical data unit (Davis: Col. 4, Ln. 13-35; Col. 11, Ln. 42-Col. 12, Ln. 68). However, Davis in view of Gindele and further in view of Milch fails to disclose the data frame comprising at least one synchronization code to separate said image data unit from said statistical data unit.

Official Notice is taken that it is well known and expected in the art to add a specific synchronization pattern, or sequence to the leading end or both the leading and trailing ends of each block of data or frame in order to transmit numerous data links between integrated circuit. Therefore, it would have been obvious to one of ordinary skill in the art to modify the device of Davis, Gindele and Milch to include at least one synchronization code in order to separate each block of image data and statistical data unit and thereby improving the way of identifying individual block of data in according to the recognized synchronization codes.

As Applicant has not traversed the old and well known statement set forth above, "the data frame comprising at least one at least one synchronization code to separate said image data unit from said statistical data unit" is now taken as admitted prior art. See MPEP 2144.03(c).

With regarding to **claim 4**, Davis in view of Gindele and further in view of Milch discloses a method wherein said image data unit comprises image data generated by at least one said row of pixels (it is inherent that image sensor 16 comprises at least one row of pixels) and that said statistical data unit comprises statistical data for said image data generated by at least one row of pixels (Davis: Col. 2, Ln. 51- Col. 3, Ln.28; Gindele: Col. 5, Ln. 3-13).

With regarding to **claim 5**, Davis in view of Gindele and further in view of Milch discloses a method wherein said row of pixels is a vertical or horizontal row in said image sensor

(the image pickup device 16 of Davis reference and 10 of Gindele reference are inherently included vertical and horizontal row of pixels).

With regarding to **claims 7,** Davis in view of Gindele and further in view of Milch fails to explicitly disclose wherein the camera module and the electronic device are integrated into one single device and that said bus is a device-internal bus.

Official Notice is taken that it is well known and expected in the art to integrate the camera module, the electronic device and the bus into a single multimedia camera chip in order to reduce the space, power constraints and overall cost. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Davis, Gindele and Milch by having the camera module, the electronic device, and the serial bus integrated into one single device in order to provide an improve image pickup unit and thereby reducing space, power, and overall cost.

As Applicant has not traversed the old and well known statement set forth above, "wherein the camera module and the electronic device are integrated into one single device and that said bus is a device-internal bus" is now taken as admitted prior art. See MPEP 2144.03(c).

With regarding to **claim 8,** Davis in view of Gindele and further in view of Milch discloses a method wherein said transmitted statistical data is used as the generation basis for at least one parameter related to image processing (Gindele: Col. 5, Ln. 3-35).

With regarding to **claim 9,** Davis in view of Gindele and further in view of Milch discloses a method wherein said at least one image-processing parameter created is used for the processing of the image to be generated (Gindele: Col. 5, Ln. 3-35).

With regarding to **claim 11**, Davis discloses a device comprising a camera module and an electronic device (Fig. 1; see the connections between camera 10 and other electronics device; Col. 4, Ln. 12-34), comprising means for generating image data in the image sensor of the camera module (Figs. 1; camera 10), said image sensor comprising at least one row of pixels and said image data comprising the data generated by said rows of pixels (the image sensor 16 inherently includes at least one row of pixels and generates image data from the row of pixel),

However, Davis fails to explicitly disclose a means for collecting statistical data on said image data, wherein said statistical data is suitable for processing an image to be generated; wherein the device further comprises means for transmitting image data and statistical data from the camera module to the electronic device essentially at the same time.

In the same field of endeavor, Gindele teaches a camera system wherein a source digital image is received and processed by a digital image processor (Figs. 2-3; 20) in order to calculate a brightness balance value (Col. 5, Ln. 3-6). Gindele further teaches that the source digital image and the brightness balance value are transmitted over a computer network (Figs. 2-3; 45) wherein the digital image processor (Fig. 3; 20) of a second computer system receives the source digital image and uses the brightness balance value to adjust the overall brightness of the digital image in a manner such that a pleasing looking image is produced (Figs. 2-3; Col. 5, Ln. 6-36). In light of the teaching from Gindele, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Davis to transmit a source image and

brightness balance value of the source image over a communication system. The modifications thus permit a second computer system to enhance the look of the received source image using the received brightness balance value (Gindele: Col. 5, Ln. 6-36).

Davis in view of Gindele teaches an imaging device for providing images and meta-data (Davis: Figs. 1 and 3; abstract Col. 4, Ln. 12-34; statistical data is interpreted as other operating parameters from a camera and brightness data which is a pieces or sample of meta-data; see Gindele: Col. 5, Ln. 25-36), but Davis in view of Gindele fails to explicitly disclose a means for adjusting on the basis of said statistical data, said image sensor of the camera module for generating image data for a next image.

In the same field of endeavor, Milch teaches an imaging device wherein a recorded data generally known in the imaging industry as metadata, may contain information about the capture scene, or about the photographer's technical preferences, or even contain information on how the image should be reproduced (Col. 1, Ln. 35-47). In light of the teaching from Milch, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the metadata of Davis and Gindele to contain information on how the image should be reproduced. The modifications thus provide a means for reproducing an identical image.

With regarding to **claim 12**, Davis in view of Gindele and further in view of Milch discloses the same limitations as recited in claim 3. Therefore, claim 12 is analyzed and rejected as discussed in claim 3.

With regarding to **claim 13**, Davis in view of Gindele and further in view of Milch discloses a device wherein said data frame comprises said image data and said statistical data interlaced with each other and that said data frame is transmitted from the camera module to the electronic device on at least one bus (Davis: Col. 4, Ln. 12-34; the bus is interpreted as one of the USB, Parallel ports, PCI, IEEE 1394 or other networked devices; Gindele: Col. 4, Ln. 49-Col. 5, Ln. 36).

With regarding to **claim 15,** Davis in view of Gindele and further in view of Milch discloses the same subject matter as claimed in claim 11. Further more, Davis discloses a device wherein the device also comprises means for generating an image-processing parameter from the transmitted statistical data (Davis: Col. 2, Ln, 15- Col. 3, Ln.29; Col. 4, Ln. 50-59; Gindele: Col. 5, Ln. 3-6).

With regarding to **claim 16,** Davis in view of Gindele and further in view of Milch discloses a device, wherein in addition, the device comprises means for image data processing to process the transmitted image data based on said image-processing parameter (Davis: Col. 4, Ln. 50-59; Gindele: Col. 5, Ln. 3-6).

With regarding to **claim 17,** Davis in view of Gindele and further in view of Milch discloses a device wherein said means for image data processing have been implemented for processing the image to be generated (Gindele: Col. 5, Ln. 6-36).

With regarding to **claim 19**, Davis in view of Gindele and further in view of Milch discloses a device wherein said device comprising said camera module and said electronic device is a mobile communications terminal (Davis: Fig. 2; Col. 4, Ln. 35-68).

With regarding to **claim 20**, Davis in view of Gindele and further in view of Milch discloses the same limitations as claimed in claim 7. Therefore, claim 20 is analyzed and rejected as discussed in claim 7.

With regarding to **claim 21,** Davis in view of Gindele and further in view of Milch discloses a method wherein said collecting of statistical data from said image data performed said camera module, said statistical data including image brightness (Gindele: Col. 4, Ln. 48-Col. 5, Ln. 35).

With regarding to **claim 22**, Davis in view of Gindele and further in view of Milch discloses the same limitations as claimed in claim 21. Therefore, claim 22 is analyzed and rejected as discussed in claim 21.

10. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Gindele, in view of Milch and further in view of Shimizu (US-6,515,271).

With regarding to **claim 6,** Davis in view of Gindele and further in view of Milch fails to explicitly disclose wherein said data frame is transmitted from the camera module to the

electronic device in the form of a serial synchronized differential signal. However, the limitations are well known in the art as taught by Shimizu.

In the same field of endeavor, Shimizu teaches a CMOS image sensor unit using low voltage differential signaling (LVDS) circuit as means for transmitting image data between transmitting side (CMOS image sensor unit) and the receiving side (CPU and Memory) (Fig. 4-5; Col. 7, Ln. 65-67 – Col. 8, Ln. 1-35). In light of the teaching from Shimizu, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Davis, Gindele and Milch by having a low voltage differential signal circuit to transmits and receives data in order to transmit the data frame from the camera module to the electronic device in the form of a serial synchronized differential signal. The modifications thus provide serial data transmission with low power consumption, less noise interference and less image deterioration (Shimizu ; Col. 2, Ln. 62-67).

With regarding to **claim 14,** Davis in view of Gindele and further in view of Milch fails to explicitly disclose wherein said data transmission means are additionally implemented for transmitting said data frame from the camera module to the electronic device in the form of a serial synchronized differential signal. However, the limitations are well known in the art as taught by Shimizu.

In the same field of endeavor, Shimizu teaches a CMOS image sensor unit using low voltage differential signaling (LVDS) circuit as a mean for transmitting image data between transmitting side (CMOS image sensor unit) and the receiving side (CPU and Memory) (Fig. 4-5; Col. 7, Ln. 65-67 – Col. 8, Ln. 1-35). In light of the teaching from Shimizu, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the

device of Davis, Gindele and Milch by having a low voltage differential signal circuit to transmit and receives data in order to transmit the data frame from the camera module to the electronic device in the form of a serial synchronized differential signal. The modifications thus provide serial data transmission with low power consumption, less noise interference and less image deterioration (Shimizu ; Col. 2, Ln. 62-67).

11. Claims 1-5, 7-9, 11-13, 15-17, 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Gindele and further in view of Koide (US-6,870,566).

With regarding to **claim 1**, Davis discloses a method for the transmission of data between a camera module and an electronic device (Fig. 1; see the connections between camera 10 and other electronics device; Col. 4, Ln. 12-34), said method comprising the steps of generating image data in the image sensor of the camera module (Figs. 1; camera 10), said image sensor comprising at least one row of pixels, and said image data comprising the data generated by said row of pixels (the image sensor 16 inherently includes at least one row of pixels and generates image data from the row of pixel).

However, Davis fails to explicitly discloses the steps of collecting statistical data from the image data, wherein said statistical data is suitable for processing an image to be generated; and wherein the method further comprises: transmitting said image data and said statistical data from the camera module to the electronic device essentially at the same time.

In the same field of endeavor, Gindele teaches a camera system wherein a source digital image is received and processed by a digital image processor (Figs. 2-3; 20) in order to calculate

a brightness balance value (Col. 5, Ln. 3-6). Gindele further teaches that the source digital image and the brightness balance value are transmitted over a computer network (Figs. 2-3; 45) wherein the digital image processor (Fig. 3; 20) of a second computer system receives the source digital image and uses the brightness balance value to adjust the overall brightness of the digital image in a manner such that a pleasing looking image is produced (Figs. 2-3; Col. 5, Ln. 6-36). In light of the teaching from Gindele, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Davis to transmit a source image and brightness balance value of the source image over a communication system. The modifications thus permit a second computer system to enhance the look of the received source image using the received brightness balance value (Gindele: Col. 5, Ln. 6-36).

Davis in view of Gindele teaches an imaging device for providing images and meta-data (Davis: Figs. 1 and 3; abstract Col. 4, Ln. 12-34; statistical data is interpreted as other operating parameters from a camera and brightness data which is a pieces or sample of meta-data; see Gindele: Col. 5, Ln. 25-36), but Davis in view of Gindele fails to explicitly disclose using said statistical data for adjusting said image sensor of the camera module for generating image data for a next image.

In the same field of endeavor, Koide teaches an imaging device wherein luminance/ brightness value of the sensed image and data for white balance correction which entered AE/AWB controller and inputted to an external computer (Figs. 1 and 5; external computer 12) for calculating an electronic shutter value for the CCD 102 to obtain an image at proper expose (Col. 13, Ln. 25-42). In light of the teaching from Koide, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the metadata of Davis and

Gindele by inputting luminance/ brightness value of the sensed image to an external computer for calculating an electronic shutter value for a CCD. The modifications thus obtain an image at proper expose (Koide: Col. 13, Ln. 25-42).

With regarding to **claim 2**, Davis in view of Gindele and further in view of Koide discloses a method wherein said image data and said statistical data are transmitted interlaced with each other on at least one common bus (Davis: Col. 4, Ln. 12-34; Gindele: Col. 4, Ln. 49-Col. 5, Ln. 36).

With regarding to **claim 3**, Davis in view of Gindele and further in view of Koide discloses a method wherein said image data and said statistical data are transmitted in the same data frame (Davis: Fig. 3), said data frame comprising at least one image data unit at least one statistical data unit (Davis: Col. 4, Ln. 13-35; Col. 11, Ln. 42-Col. 12, Ln. 68). However, Davis in view of Gindele and further in view of Koide fails to disclose the data frame comprising at least one synchronization code to separate said image data unit from said statistical data unit.

Official Notice is taken that it is well known and expected in the art to add a specific synchronization pattern, or sequence to the leading end or both the leading and trailing ends of each block of data or frame in order to transmit numerous data links between integrated circuit. Therefore, it would have been obvious to one of ordinary skill in the art to modify the device of Davis, Gindele and Koide to include at least one synchronization code in order to separate each block of image data and statistical data unit and thereby improving the way of identifying individual block of data in according to the recognized synchronization codes.

As Applicant has not traversed the old and well known statement set forth above, "the data frame comprising at least one at least one synchronization code to separate said image data unit from said statistical data unit" is now taken as admitted prior art. See MPEP 2144.03(c).

With regarding to **claim 4**, Davis in view of Gindele and further in view of Koide discloses a method wherein said image data unit comprises image data generated by at least one said row of pixels (it is inherent that image sensor 16 comprises at least one row of pixels) and that said statistical data unit comprises statistical data for said image data generated by at least one row of pixels (Davis: Col. 2, Ln. 51- Col. 3, Ln.28; Gindele: Col. 5, Ln. 3-13).

With regarding to **claim 5**, Davis in view of Gindele and further in view of Koide discloses a method wherein said row of pixels is a vertical or horizontal row in said image sensor (the image pickup device 16 of Davis reference and 10 of Gindele reference are inherently included vertical and horizontal row of pixels).

With regarding to **claims 7,** Davis in view of Gindele and further in view of Koide fails to explicitly disclose wherein the camera module and the electronic device are integrated into one single device and that said bus is a device-internal bus.

Official Notice is taken that it is well known and expected in the art to integrate the camera module, the electronic device and the bus into a single multimedia camera chip in order to reduce the space, power constraints and overall cost. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Davis,

Gindele and Koide by having the camera module, the electronic device, and the serial bus integrated into one single device in order to provide an improve image pickup unit and thereby reducing space, power, and overall cost.

As Applicant has not traversed the old and well known statement set forth above, "wherein the camera module and the electronic device are integrated into one single device and that said bus is a device-internal bus" is now taken as admitted prior art. See MPEP 2144.03(c).

With regarding to **claim 8,** Davis in view of Gindele and further in view of Koide discloses a method wherein said transmitted statistical data is used as the generation basis for at least one parameter related to image processing (Gindele: Col. 5, Ln. 3-35).

With regarding to **claim 9,** Davis in view of Gindele and further in view of Koide discloses a method wherein said at least one image-processing parameter created is used for the processing of the image to be generated (Gindele: Col. 5, Ln. 3-35).

With regarding to **claim 11,** Davis discloses a device comprising a camera module and an electronic device (Fig. 1; see the connections between camera 10 and other electronics device; Col. 4, Ln. 12-34), comprising means for generating image data in the image sensor of the camera module (Figs. 1; camera 10), said image sensor comprising at least one row of pixels and said image data comprising the data generated by said rows of pixels (the image sensor 16 inherently includes at least one row of pixels and generates image data from the row of pixel),

However, Davis fails to explicitly disclose a means for collecting statistical data on said image data, wherein said statistical data is suitable for processing an image to be generated;

wherein the device further comprises means for transmitting image data and statistical data from the camera module to the electronic device essentially at the same time.

In the same field of endeavor, Gindele teaches a camera system wherein a source digital image is received and processed by a digital image processor (Figs. 2-3; 20) in order to calculate a brightness balance value (Col. 5, Ln. 3-6). Gindele further teaches that the source digital image and the brightness balance value are transmitted over a computer network (Figs. 2-3; 45) wherein the digital image processor (Fig. 3; 20) of a second computer system receives the source digital image and uses the brightness balance value to adjust the overall brightness of the digital image in a manner such that a pleasing looking image is produced (Figs. 2-3; Col. 5, Ln. 6-36). In light of the teaching from Gindele, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Davis to transmit a source image and brightness balance value of the source image over a communication system. The modifications thus permit a second computer system to enhance the look of the received source image using the received brightness balance value (Gindele: Col. 5, Ln. 6-36).

Davis in view of Gindele teaches an imaging device for providing images and meta-data (Davis: Figs. 1 and 3; abstract Col. 4, Ln. 12-34; statistical data is interpreted as other operating parameters from a camera and brightness data which is a pieces or sample of meta-data; see Gindele: Col. 5, Ln. 25-36), but Davis in view of Gindele fails to explicitly disclose a means for adjusting on the basis of said statistical data, said image sensor of the camera module for generating image data for a next image.

In the same field of endeavor, Koide teaches an imaging device wherein luminance/ brightness value of the sensed image and data for white balance correction which entered

AE/AWB controller and inputted to an external computer (Figs. 1 and 5; external computer 12) for calculating an electronic shutter value for the CCD 102 to obtain an image at proper expose (Col. 13, Ln. 25-42). In light of the teaching from Koide, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the metadata of Davis and Gindele by inputting luminance/ brightness value of the sensed image to an external computer for calculating an electronic shutter value for a CCD. The modifications thus obtain an image at proper expose (Koide: Col. 13, Ln. 25-42).

With regarding to **claim 12**, Davis in view of Gindele and further in view of Koide discloses the same limitations as recited in claim 3. Therefore, claim 12 is analyzed and rejected as discussed in claim 3.

With regarding to **claim 13**, Davis in view of Gindele and further in view of Koide discloses a device wherein said data frame comprises said image data and said statistical data interlaced with each other and that said data frame is transmitted from the camera module to the electronic device on at least one bus (Davis: Col. 4, Ln. 12-34; the bus is interpreted as one of the USB, Parallel ports, PCI, IEEE 1394 or other networked devices; Gindele: Col. 4, Ln. 49-Col. 5, Ln. 36).

With regarding to **claim 15,** Davis in view of Gindele and further in view of Koide discloses the same subject matter as claimed in claim 11. Further more, Davis discloses a device wherein the device also comprises means for generating an image-processing parameter

from the transmitted statistical data (Davis: Col. 2, Ln, 15- Col. 3, Ln.29; Col. 4, Ln. 50-59; Gindele: Col. 5, Ln. 3-6).

With regarding to **claim 16,** Davis in view of Gindele and further in view of Koide discloses a device, wherein in addition, the device comprises means for image data processing to process the transmitted image data based on said image-processing parameter (Davis: Col. 4, Ln. 50-59; Gindele: Col. 5, Ln. 3-6).

With regarding to **claim 17,** Davis in view of Gindele and further in view of Koide discloses a device wherein said means for image data processing have been implemented for processing the image to be generated (Gindele: Col. 5, Ln. 6-36).

With regarding to **claim 19,** Davis in view of Gindele and further in view of Koide discloses a device wherein said device comprising said camera module and said electronic device is a mobile communications terminal (Davis: Fig. 2; Col. 4, Ln. 35-68).

With regarding to **claim 20,** Davis in view of Gindele and further in view of Koide discloses the same limitations as claimed in claim 7. Therefore, claim 20 is analyzed and rejected as discussed in claim 7.

With regarding to **claim 21,** Davis in view of Gindele and further in view of Koide discloses a method wherein said collecting of statistical data from said image data performed

said camera module, said statistical data including image brightness (Gindele: Col. 4, Ln. 48-Col. 5, Ln. 35).

With regarding to **claim 22**, Davis in view of Gindele and further in view of Koide discloses the same limitations as claimed in claim 21. Therefore, claim 22 is analyzed and rejected as discussed in claim 21.

12. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Gindele, in view of Koide and further in view of Shimizu (US-6,515,271).

With regarding to **claim 6,** Davis in view of Gindele and further in view of Koide fails to explicitly disclose wherein said data frame is transmitted from the camera module to the electronic device in the form of a serial synchronized differential signal. However, the limitations are well known in the art as taught by Shimizu.

In the same field of endeavor, Shimizu teaches a CMOS image sensor unit using low voltage differential signaling (LVDS) circuit as means for transmitting image data between transmitting side (CMOS image sensor unit) and the receiving side (CPU and Memory) (Fig. 4-5; Col. 7, Ln. 65-67 – Col. 8, Ln. 1-35). In light of the teaching from Shimizu, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Davis, Gindele and Koide by having a low voltage differential signal circuit to transmits and receives data in order to transmit the data frame from the camera module to the electronic device in the form of a serial synchronized differential signal. The modifications thus

provide serial data transmission with low power consumption, less noise interference and less image deterioration (Shimizu ; Col. 2, Ln. 62-67).

With regarding to **claim 14,** Davis in view of Gindele and further in view of Koide fails to explicitly disclose wherein said data transmission means are additionally implemented for transmitting said data frame from the camera module to the electronic device in the form of a serial synchronized differential signal. However, the limitations are well known in the art as taught by Shimizu.

In the same field of endeavor, Shimizu teaches a CMOS image sensor unit using low voltage differential signaling (LVDS) circuit as a mean for transmitting image data between transmitting side (CMOS image sensor unit) and the receiving side (CPU and Memory) (Fig. 4-5; Col. 7, Ln. 65-67 – Col. 8, Ln. 1-35). In light of the teaching from Shimizu, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Davis, Gindele and Koide by having a low voltage differential signal circuit to transmit and receives data in order to transmit the data frame from the camera module to the electronic device in the form of a serial synchronized differential signal. The modifications thus provide serial data transmission with low power consumption, less noise interference and less image deterioration (Shimizu ; Col. 2, Ln. 62-67).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Koizumi (US-7,129,985) discloses a camera controlling exposure on the basis of luminance signal.

b) Arai (US-5,416,515) discloses a CPU carryout exposure control conforming to luminance value.

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung H. Lam whose telephone number is 571-272-7367. The examiner can normally be reached on Monday - Friday 8AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LIN YE can be reached on 571-272-7372. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HL
10/14/07

LIN YE
SUPERVISORY PATENT EXAMINER